COMOPTEVFOR
U.S. Navy OT&E

Transformational T&E Initiatives

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OT Initiatives

- ***Early Test and Resource Planning***
- ***Integrated Test***
- ***Why do these initiatives?***
  - EA and Spiral Development has created a tremendous compression on traditional T&E schedules
  - T&E has become more complex with Systems of Systems testing becoming more prevalent.
  - CNO mandate to reduce T&E cost by 20%.
  - Eliminate large execution year test bills.

Early Test and Resource Planning

Initiative 1 - Early Test and Resource P

- ***What is it?***
  - T&E framework and resource summary prior to MS-B.
  - Framework developed from Capability Development Document (CDD), System Threat Assessment Report (STAR), and Mission Essential Task Lists (METLs)
  - Use common terms and measures
    - Compatible with fleet training community and other service/OSD test organizations – allows for portability of data.
  - All test objectives traceable to capabilities documents

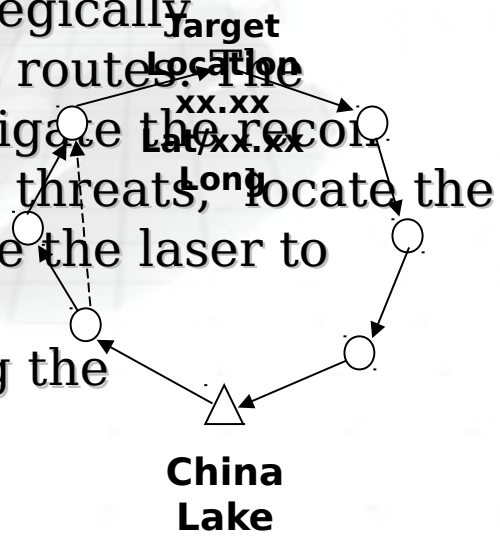
Early Test and Resource Planning

Initiative 1 - Early Test and Resource P

- ***How will we do it?***
  - " Test by Objective", scenario based design
  - METLs to define mission areas and scenarios
    - MOEs will be primarily METL based
  - Operational Vignettes to define variability of the mission areas and to create test events
    - Vignettes will identify: test assets, required ranges, instrumentation needs, limitations, M&S requirements

Example Operational Vignette

- **Scenario Description**
- Scenario #: 1.1 NMETL Ref: NTA 1.2.8
- Title: Armed Reconnaissance – Desert Environment
- Scenario Description: Two AH-XXs will conduct armed Recon on a suspected Red country supply line. The Blue aircraft will launch from a forward deployed friendly airfield. Intelligence shows the Red convoy traveling a desert road between two critical supply junctions. The convoy is known to posses MANPADs and there are SAM sites placed strategically along the ingress and egress routes. The Blue aircraft will navigate the recon area, avoiding threats, locate the threat, use the laser to designate the target, and neutralize the threat (simulated) using the CATM Hellfire missile.
- Run Plan/Geometry: **Target Location**



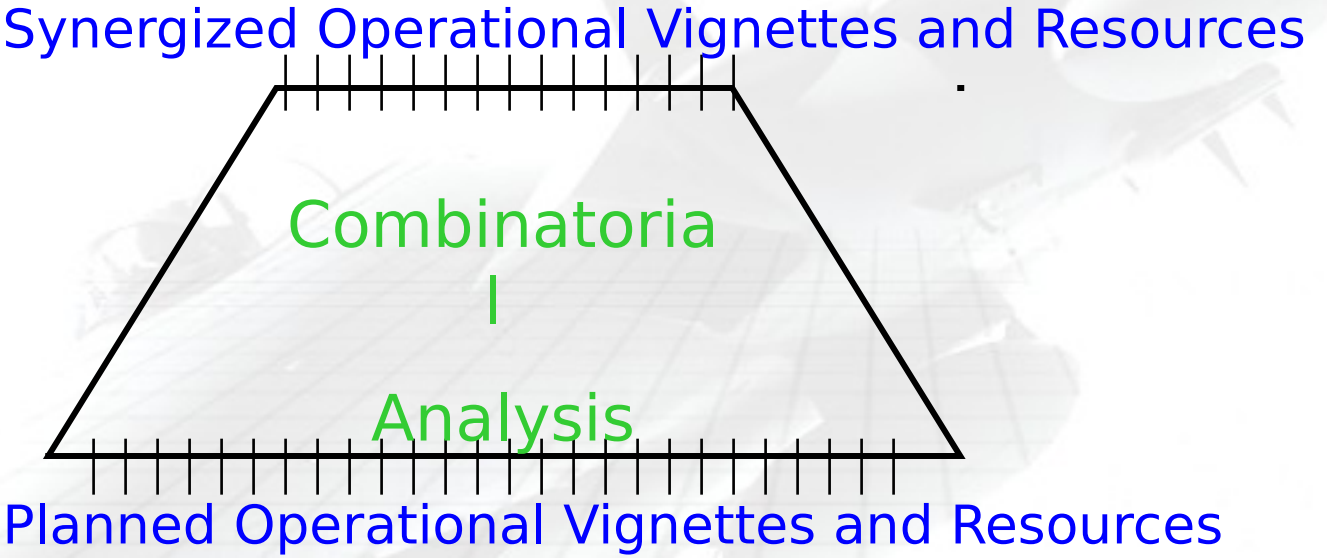
Example Operational Vignette (cont)

- **Test Articles**
  1. AH-XX Quantity – 2
- **Target:**
  Dual track truck. A wooden mockup that meets DIA standards will be used
  Personnel carrier. A Ford panel truck will be used to simulate the PC
- **Threats:**
  MANPAD (Actual/Surrogate) – Surrogate will be the XXXX
  SA-X (Real/Surrogate) – Surrogate will be the XXX
- **Countermeasures:**
  Infrared masking for truck
- **Test Site:**
  China Lake R-2508
- **Weapons Required:**
  1. AGM-163 Hellfire Quantity – 4
- **Expendables required:**
  xxx-38 Flares Quantity - 20
  YYY-39 Chaff Quantity – 50
- **Support Articles:**
  Marine spotters

- **Instrumentation Requirements:**
  Laser Spot Tracker
  TSPI
  AGM-163 TM download/recording station
- **Limitations:**
  SA-XX is currently not available either as an actual unit or surrogate. CTEIP funds are needed to develop this surrogate.
- **Modeling and Simulation:**
  The DUMASS model will be used to predict the AH-XX laser performance against the target. This will aid in determining the most stressing run-in angles for the AH-XX.
- **Projected execution time:**
  Planning – 1 hour
  range time – 3 hours
  post mission debrief and data recording – 2 hours

Early Test and Resource Planning

- Major thrust of Framework planning is to execute a combinatorial analysis on the vignettes to identify synergies.



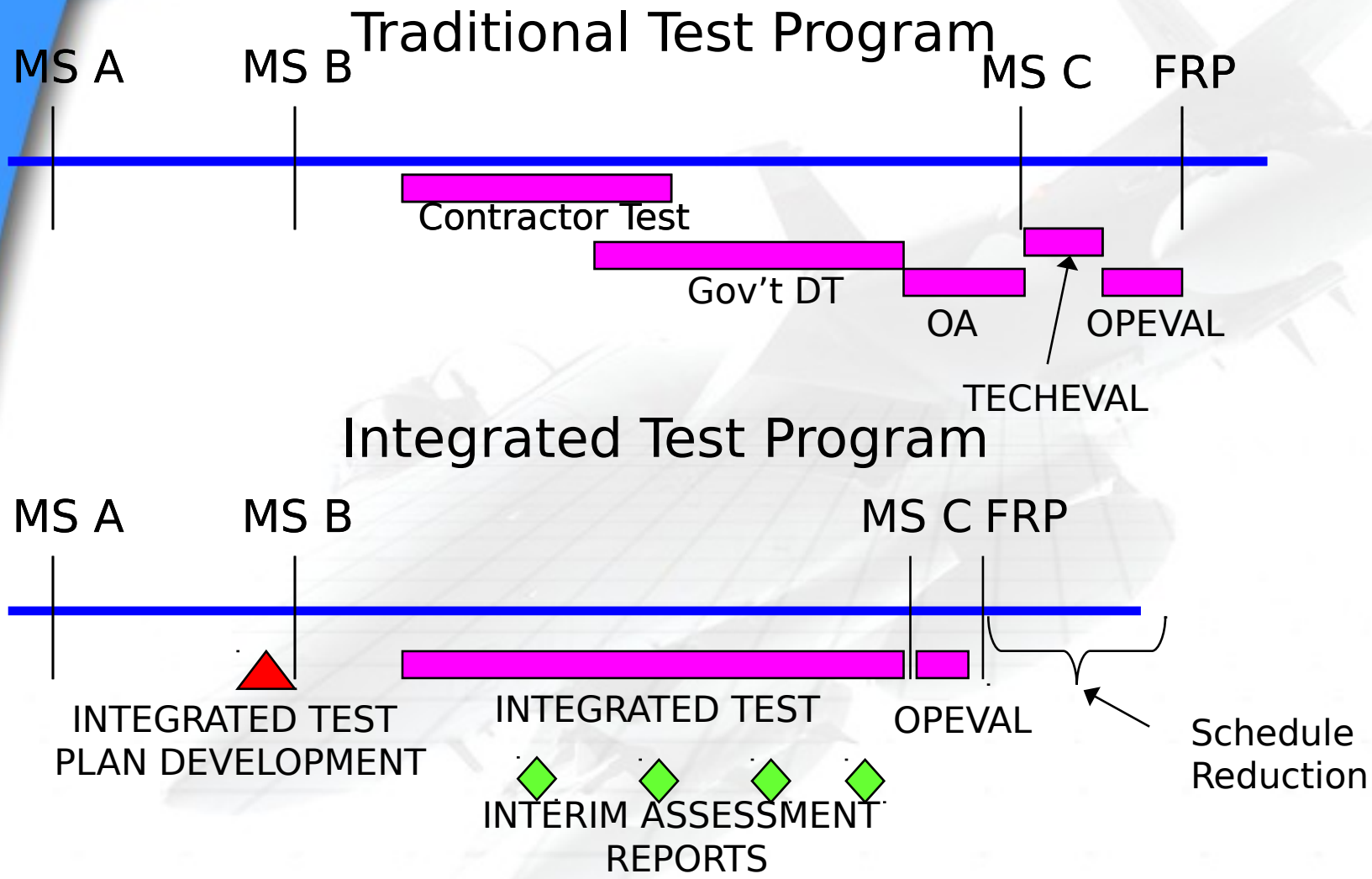
Output of Framework – Complete definition of Oper requirements and fully developed resource summa

Integrated Test

Initiative 2 - Integrated Test (IT)

- **What is it? –**
  - **Performing concurrent CT, DT and OT uniformly over a continuum.**
- **Why?**
  - **An effort to keep T&E relevant in Evolutionary Acquisition environment**
  - **More efficient use of test resources and schedules**
  - **Earlier injection of deficiency corrections into current and subsequent builds**
  - **CNO mandate to reduce T&E costs by 20%**

Integrated Test



Integrated Test Approach

- **How will we do it?**
  - **Utilize the Framework process discussed earlier and impose process on all test activities.**
  - **Test and Evaluation Working Groups (TEWGs) will merge objectives and identify synergies.**
  - **Common test plan is proposed for capturing the details of the IT.**
  - **Contractor test requirements can be parsed from common test matrix and placed in statement of work (SOW)**
  - **Test plan matrix reviewed periodically to ensure test objectives are being met.**

Benefits to Early Test Planning/IT

- Mutual understanding of test requirements
- Better understanding of contractor test requirements – allows for better SOW preparation
- Identifies limitations and mitigation strategies early
- Early identification of system deficiencies.
  - What costs $1 to fix today costs $10,000 to fix tomorrow
- Identification of test costs prior to Acquisition Program Baseline Agreements formally issued
- Better use of navy test assets and resources

Preliminary calculations predict a 15% reductio
Schedule by implementing these initiatives!

Challenges

- Implementation of contractors in the IT process
- Resourced to be responsive to program changes?
- Cultural issues
  - How high are the stovepipes?
  - How willing are the IT members (and those externally who influence them) willing to change their philosophies?
  - How does the program handle discovery of major anomalies?
  - Configuration control of design.
    - When is the system “good enough” to freeze?
      - Can we test w/o “freezing” the configuration?
    - What is “Production Representative”? How much regression testing is needed?

Early Test Planning/IT Pilot Programs

- VXX Presidential Helicopter Pilot Program
  - **Currently planned as totally integrated test team**
  - **Fast Track program with two defined increments**
  - **Framework planning sessions begin Mar 04**
  - **Testing begins mid FY-05**
  - **Approval in principle from DOT&E**
- Other programs targeted as pilot candidates:
  - **DD(X)**
  - **Littoral Combat Ship (LCS)**
  - **Advanced Hawkeye**
  - **T-AKE**
  - **F-18 HOL software**
  - **Multi-role Maritime Aircraft (MMA)**

QUESTIONS ?